constitutes a forceful argument for the effectiveness of transsphenoidal hypophysectomy as a palliative measure in treating carcinoma of the breast and prostate. In previous years, when craniotomy was the preferred method of hypophysectomy, adrenalectomy was considered a less hazardous therapeutic approach to these types of cancer. Although pituitary ablation was known to produce slightly, but significantly, superior therapeutic results, adrenalectomy was regarded as a satisfactory alternative—possibly because the roles of growth hormone and prolactin in the evolution of these disorders was still poorly understood. With the advent of current stereotactic and transnasal procedures for pituitary ablation, the advantages and superiority of hypophysectomy in the treatment of breast and prostate cancer cannot be questioned.

The recognition of estrogen receptors in breast cancer cells has provided an alternative to the therapeutic trial as a means of anticipating a tumor's hormone-dependence. The correlation between the presence of estrogen receptors in a tumor and the extent to which that tumor is hormone-responsive is less than perfect—but, as reflected in Silverberg's small series, most patients bearing estrogen receptor-positive tumors respond to hypophysectomy, and few whose tumors are receptor-negative derive benefit from the procedure. Recent evidence strongly suggests that patients with receptor-negative tumors respond well to cytotoxic chemotherapy, whereas those with receptor-positive tumors have a distinctly inferior response.

To review the many different manifestations of metastatic breast cancer and the preferred methods of management would exceed both my knowledge and the intent of this editorial. The point is this: when palliation of advanced disease is the problem at hand, select the form of therapy that is judged to be most appropriate because of the predicted outcome and the possible morbidity. For example, it would be inappropriate to treat a solitary, painful metastasis to the femur by chemotherapy or hypophysectomy, rather than by local irradiation. In treating a patient whose disease is widely disseminated and dominated by multiple osseous lesions, the initial approach could be selected on the basis of information from an assay for estrogen receptors in tumor taken at the primary operation or removed from an accessible metastasis. In cases of receptor-positive tumors, oophorectomy would be the first maneuver for managing premenopausal patients, and hormonal therapy for postmenopausal patients, with hypophysectomy as a secondary treatment for responders at the time of relapse. For receptor-negative patients, present experience argues for cytotoxic chemotherapy at the outset. If the estrogen-receptor activity of the tumor has not been determined, and if removal of a metastasis (for example, to a superficial lymph node) is not a reasonable course to follow, then local practice will determine the first approach to management. Here I take the editorial liberty of expressing my prejudice for pursuing hormone therapy initially, for *if* the tumor is sensitive, an objective remission that may last for many months, or even a few years, is a realistic expectation.

Hormone therapy and ablation of endocrine organs are intended only for palliation of the disease. One day in the future, cytotoxic chemotherapy—possibly in concert with immunologic enhancement—will cure disseminated cancer of the breast. When that day arrives, palliative forms of therapy will be relegated to the annals of medical history. Nevertheless, the cure of advanced disease is still in the dim future; in the meantime, hypophysectomy can and should be used to its best advantage. For many patients who cannot be cured, the judicious and sequential application of available therapeutic approaches can convert breast cancer to a chronic disease.

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Stroke Prevention

THOUGH THE ECONOMIC COST and mortality due to strokes are staggering, they still are secondary to the social trauma experienced by disabled stroke victims. The total value of stroke prevention is nearly impossible to evaluate. An aging population portends a socioeconomic problem of ever increasing magnitude.

Dr. Herbert Machleder's Medical Progress article in this issue clearly expresses the importance of early and accurate detection and evaluation of transient ischemic attack (TIA) and asymptomatic bruits. The problem of stroke is well presented in the paper and we welcome a sound, rational approach to the detection and prevention of potential strokes in stroke-prone persons. Pinpointing the stroke problem to those with increased risk factors may be ideal, but one cannot

ignore the consequence of strokes in lower risk groups as well. Therefore, universal awareness and detection of stroke-prone persons must be achieved.

Further amplification perhaps is warranted in certain aspects of this excellent article. With the exception of the very thin neck and the low carotid bifurcation, it is doubtful that many physicians will find cervical carotid pulse palpation reliable for carotid evaluation. Although auscultation for cervical carotid bruits is extremely important in physical examinations, attempting to define their significance by auscultation is fraught with error. The soft bruit of insignificant stenosis may be indistiguishable from the barely audible bruit of 80 percent to 90 percent stenosis. Also, the vagaries of memory make sequential evaluation by auscultation difficult at best. Hard copy recordings such as those obtained by carotid phonoangiography assist in evaluating the significance and progression of cervical bruits. We have also noted that cervical bruits with well defined diastolic component are essentially diagnostic of a tight internal carotid stenosis.

The emphasis on noninvasive evaluation in the detection of prestroke lesions is well justified. It should be pointed out, however, that—contrary to the author's statement—other noninvasive testing modalities have achieved equally widespread application with excellent diagnostic accuracy.[1-3] In contrast to pressure measurements by oculopneumoplethysmography, oculoplethysmography, a flow related test, and carotid phonoangiography, an audiovisual analysis of carotid bruits, have been used in many clinical laboratories for several years with excellent reliability. Newer ultrasonic imaging techniques which may in part eventually supplant arteriography show considerable potential. It can be anticipated that future developments and refinements will further enhance the noninvasive evaluation of carotid lesions.

The discussion emphasizing the lack of direct correlation between symptoms and localization of the arterial lesion is very appropriate. Many patients presenting with "nonhemispheric TIA's" of apparent vertebro-basilar origin may be relieved by endarterectomy of severe carotid stenosis. We have found there to be no significant difference in stroke incidence between patients with asymptomatic bruits and those patients with bruits and nonhemispheric symptoms.[4] Our experience shows a 20-percent stroke rate in such patients with greater than 70-percent stenosis over an average of 24 months of follow-up. On this basis prophylactic surgical therapy is recommended for asymptomatic patients with greater than 70-percent stenosis. Lesser degrees of stenosis are followed noninvasively at appropriate intervals or until the onset of TIA's, thereby avoiding unnecessary arteriography with its attendant risks and expense. The interval between studies is determined individually depending upon the character of the bruit and rate of progression since some lesions have been observed to progress rapidly in three to six months.[5] Potential ulcerative lesions are not considered for arteriography and surgical operation until the onset of TIA's or the progression to greater than 70-percent stenosis by noninvasive evaluation.

The limitations of medical therapy are documented by the current studies utilizing platelet antiaggregate therapy. This approach has shown promise but the select subgroup deriving benefits severely limits its potential application. For an average of 24 months we have followed the cases of 832 patients with cervical bruits but without lateralized symptoms or significant stenosis by oculoplethysmography. The incidence of carotid stroke without specific medical therapy was 0.7 percent.[4] This suggests that absence of significant internal carotid stenosis is a greater factor in a low incidence of stroke than is utilization of a specific medical therapy.

Dr. Machleder's article provides a comprehensive analysis of the socioeconomic problem of strokes, the importance and feasibility of detecting stroke-prone persons, and a sound rationale for the roles of medical therapy and surgical operation in stroke prevention. However, the emotional and economic impact of stroke should not provide an open license for carotid operations, the use of which should be limited to those physicians with adequate training and expertise to achieve acceptable morbidity and mortality.

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